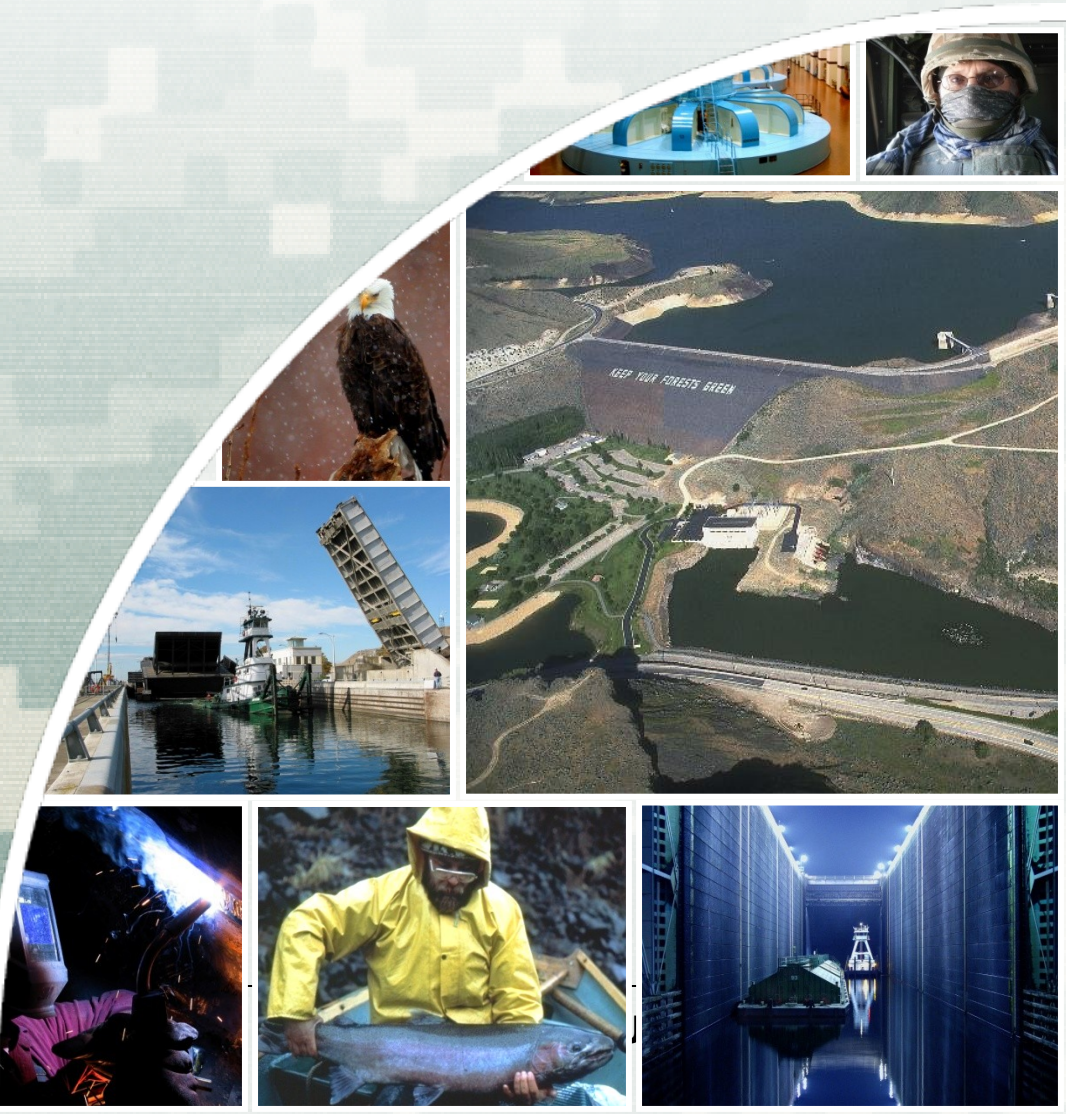
AVIAN ABUNDANCE AND DETERRENT MEASURES AT NWD DAMS

FPOM Meeting
June 14, 2012
Portland, OR



US Army Corps of Engineers
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Seeking recommendations from FPOM on what actions and structures are needed at the dams for future years to help deter piscivorous birds, including :

- APHIS Wildlife Services bird hazing actions
  - Lethal take if other actions do not work

- Avian deterrent wire arrays.

- Devices such as propane cannons and hydrocannons.

- Perching deterrents, such as spike wires, “spider” wires, small wire strung over roosting surfaces

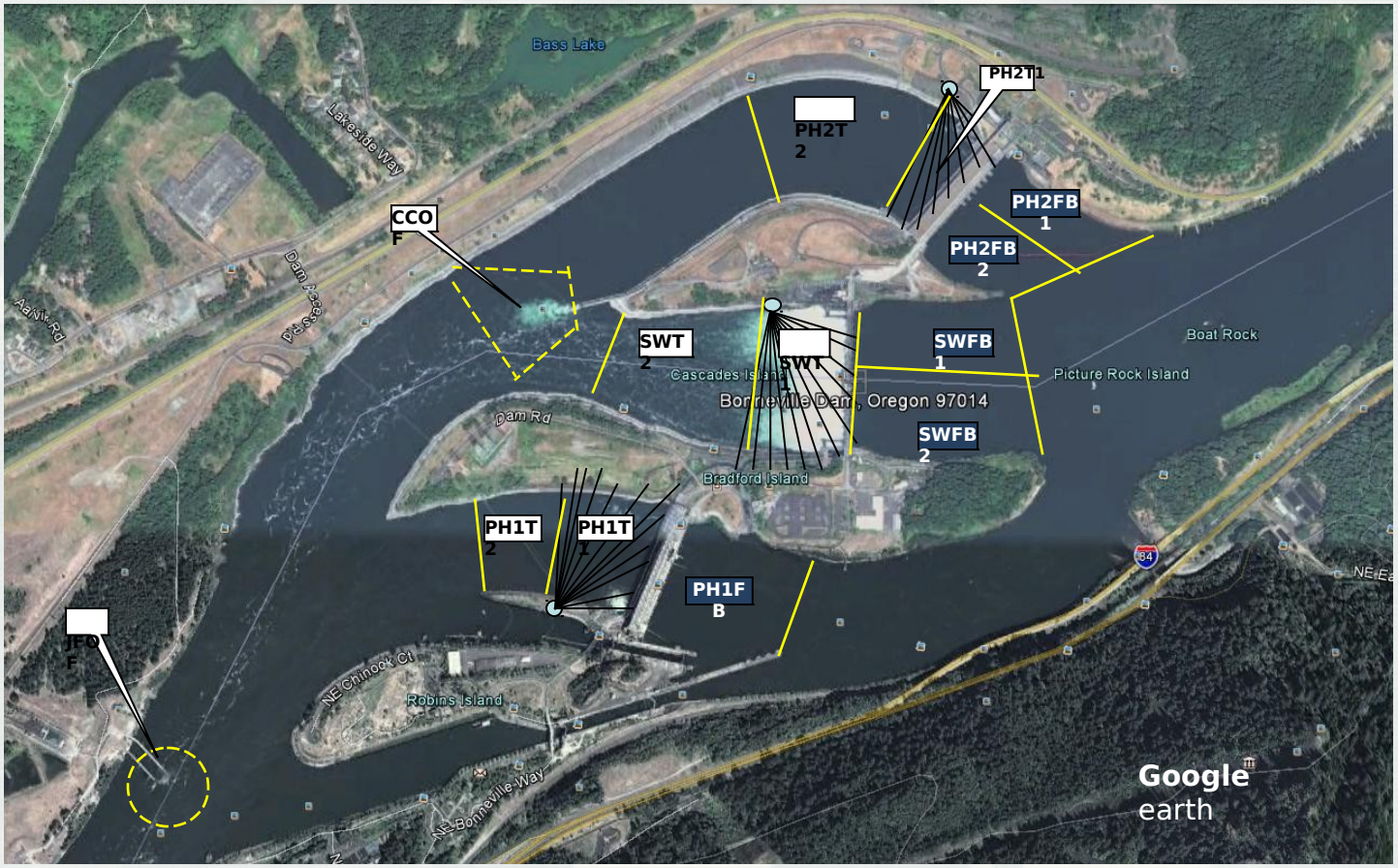
Bird deterrent actions taken at the projects are considered part of the operations and maintenance at the dams

- Recommendations received will be considered. Decisions are made by the projects.
- Subject to funding limitations

Dam	Perch deter-rents	Bird wire arrays		Hazing measures							Hazing effort	
		Tailrace		Hydro-cannon	Boat-based	Lethal take	Propane cannon	Distress call	Pyrotech-nics	Other	seasonal	Daily (hours)
		Power-house	Spill-way									
Bonne-ville		x	x	X			X		X		4/1 - 7/30	8
The Dalles		x	x						X		4/15 - 7/30	6/3 – 7/30: 14; rest of time: 8
John Day		x	x		X		X		X		4/12 -7/30	8
McNary	X	x		X			X		X		4/1 - 8/4	6/3 – 7/14: 16; rest of time: 8
Ice Harbor	X	x	x	X	X		X	X	X	laser	4/1 - 6/30	16 on week days, 8 on week ends
Lower Monu-mental	X	x		X					X	Starter Pistol	4/1 - 6/2	5/6 - 6/2: 16; rest of time: 8
Little Goose	X	x		x			X		X	Starter Pistol	4/1 - 6/16	Five days per week: 8
Lower Granite	X	x	x				X		X		4/1 - 6/30	4/22 – 6/2: 16; rest of time: 8

This Table gives a dam by dam description of the 2012 measures to reduce avian predation of salmonids at the eight inland FCRPS dams, according to the most recent information available. "x" indicates that the management action occurs at the dam.

Avian Line Arrays
Bonneville Dam



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The Dalles Dam

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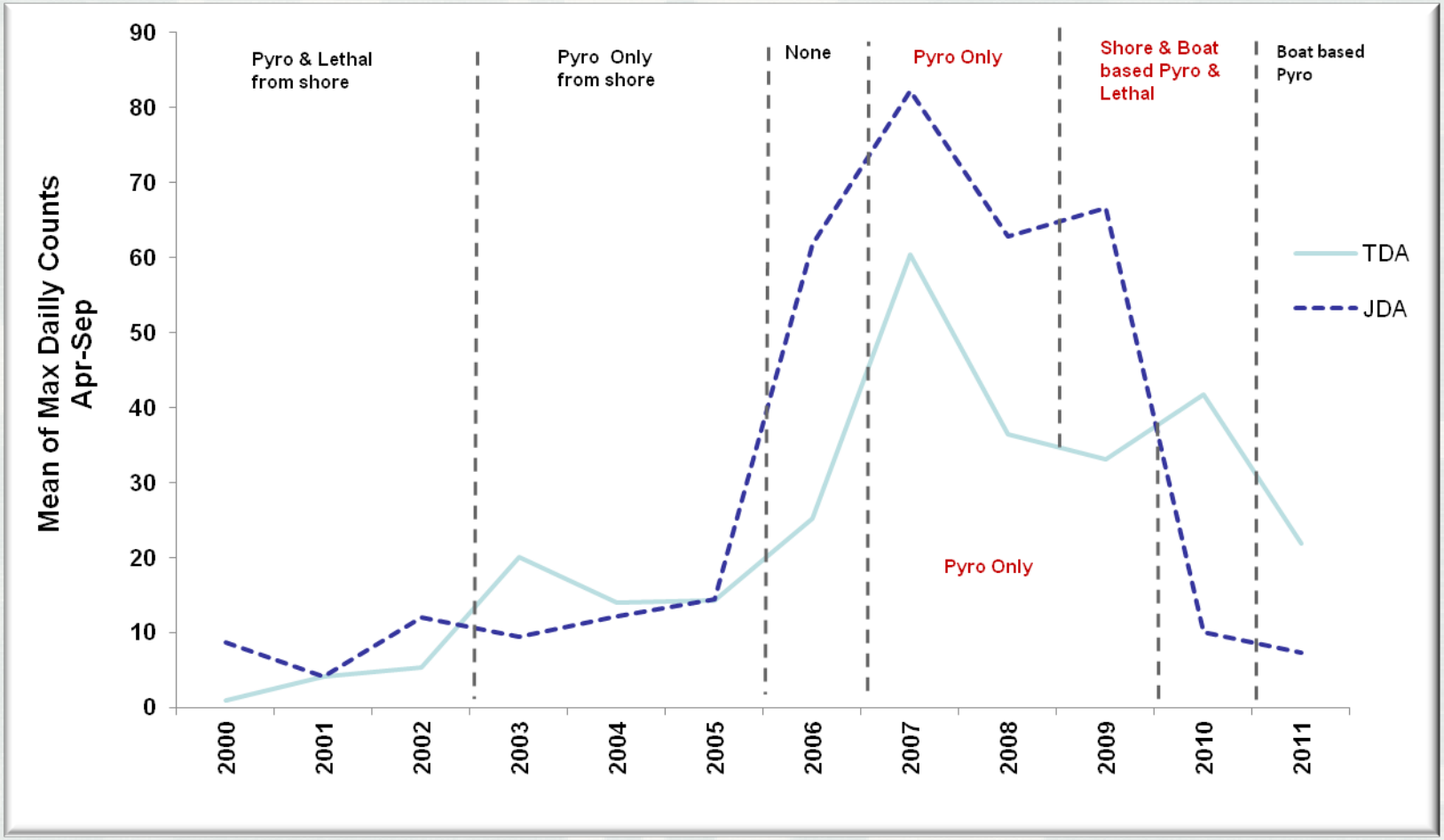
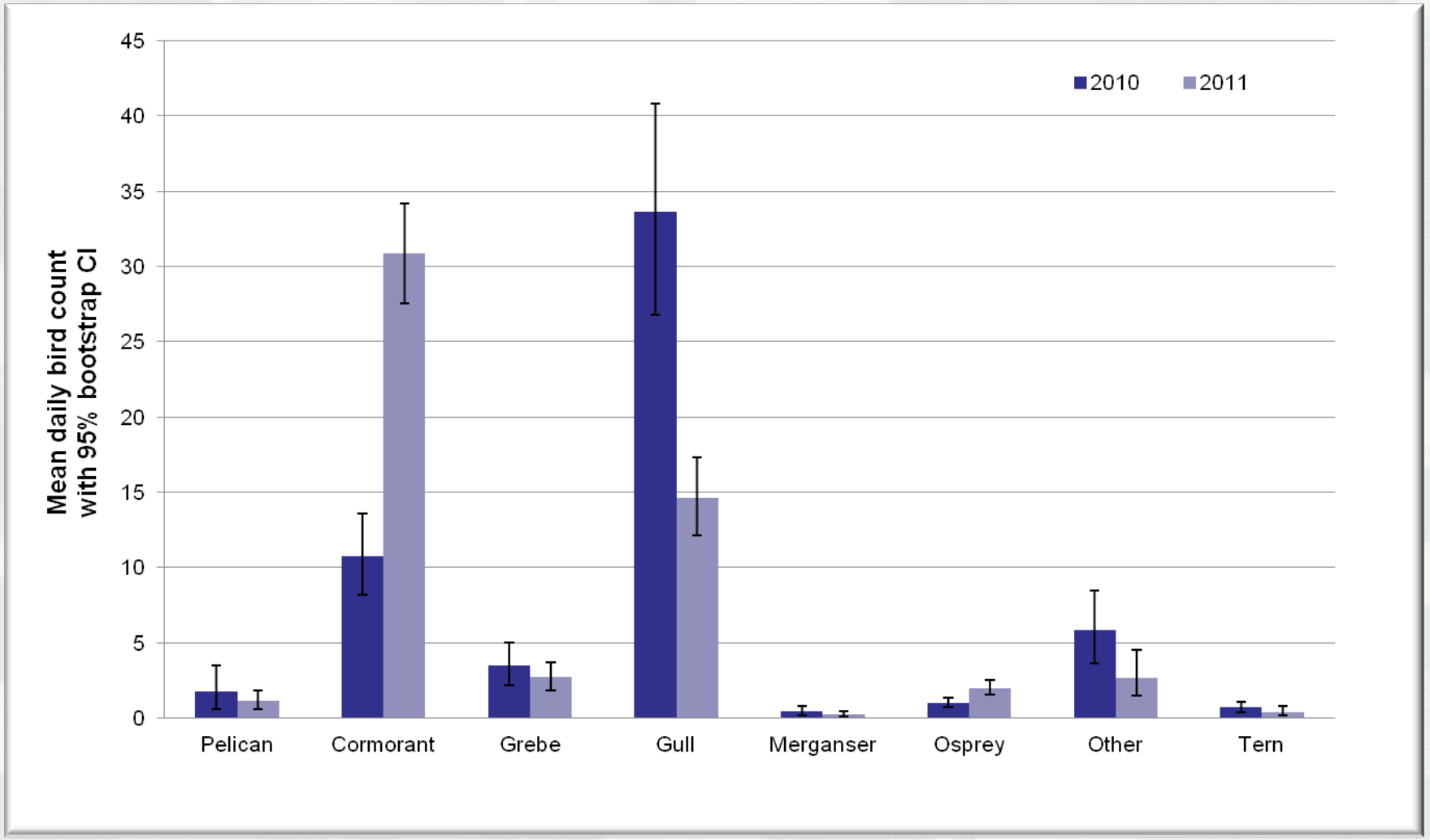
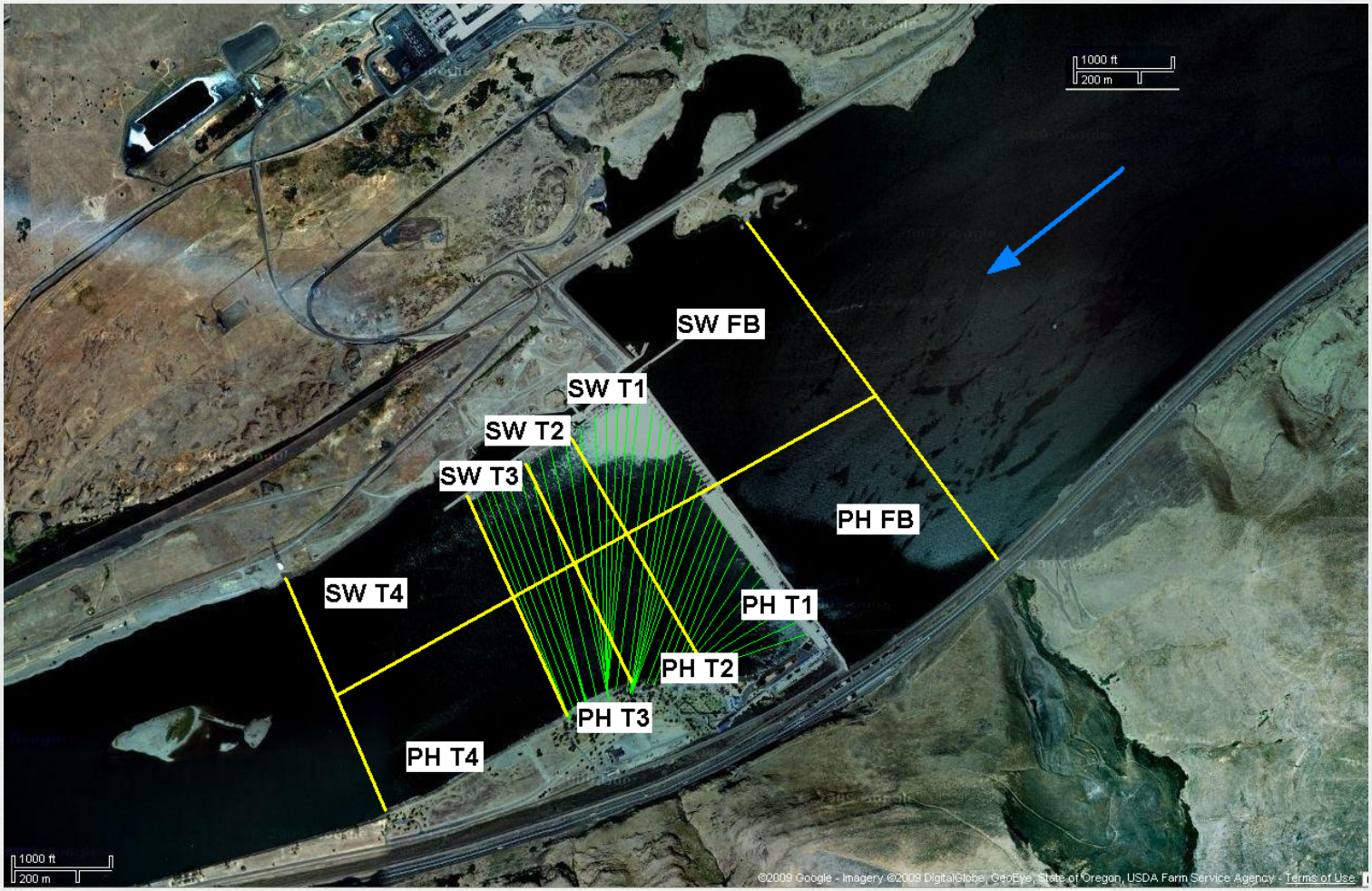


Mean yearly gull counts from maximum daily counts provided by the project biologists from April to September during fishway inspections. TDA is The Dalles and JDA is John Day (Fig. 1 from Zorich et. al 2012).



Mean daily bird counts from 2010-2011 at The Dalles Dam – foraging & resting (Fig. 17 from Zorich et. al 2012).

John Day Dam


1000 ft
200 m
SW FB
SW T1
SW T2
SW T3
PH FB
SW T4
PH T1
PH T2
PH T3
PH T4
1000 ft
200 m
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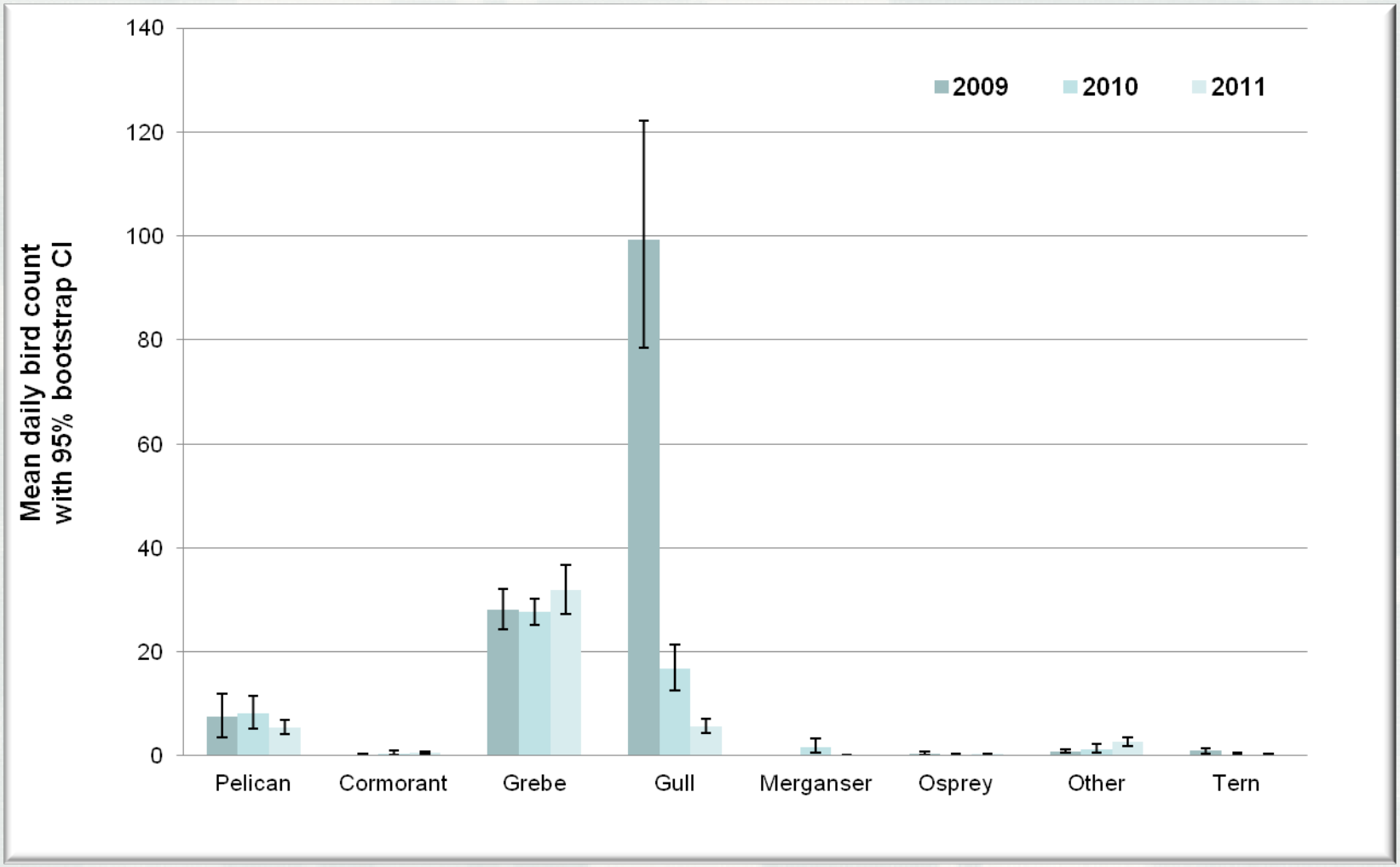
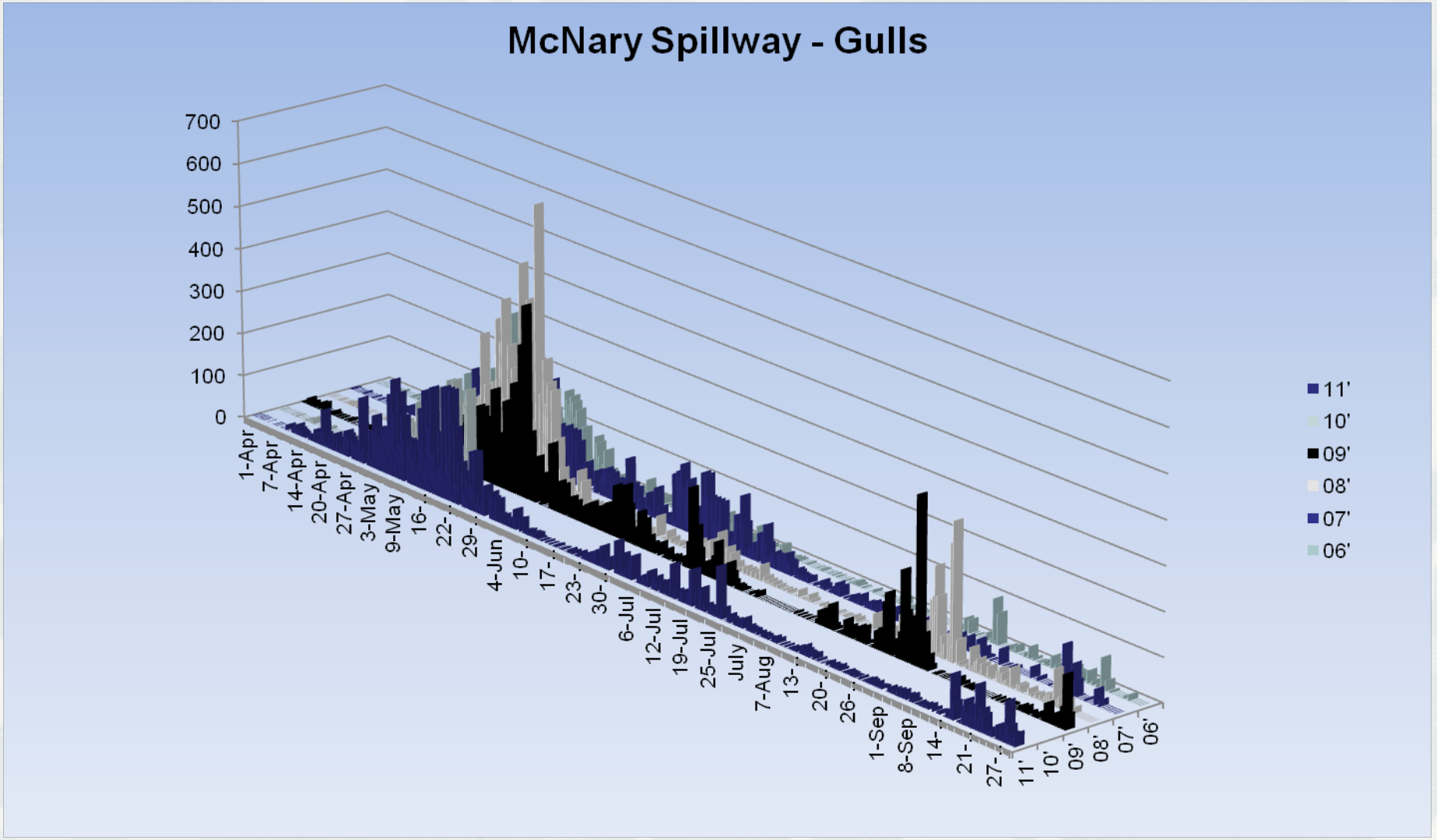


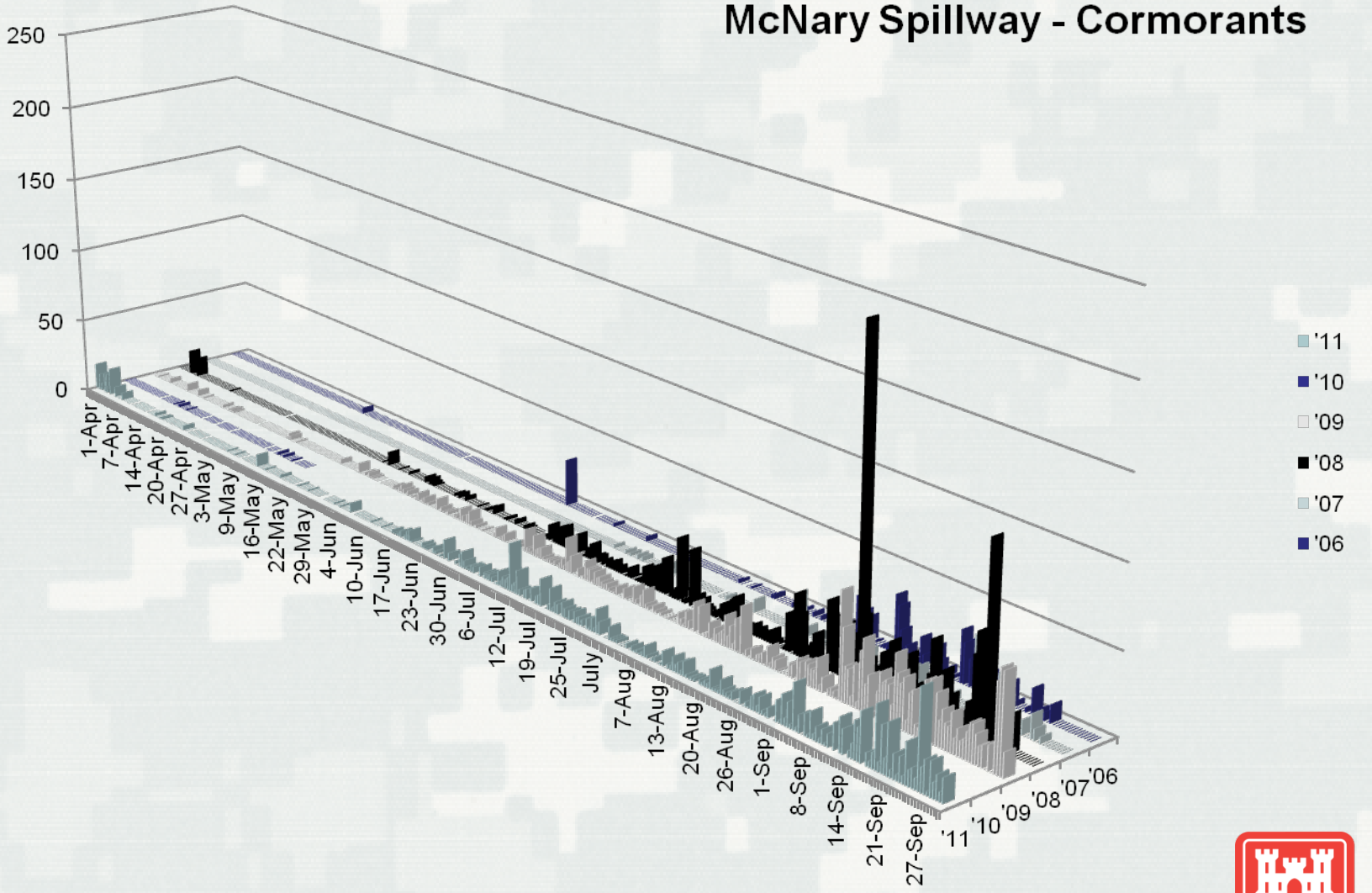
Mean daily bird counts from 2009-2011 at John Day Dam – foraging & resting (Fig 16 from Zorich et. al 2010)

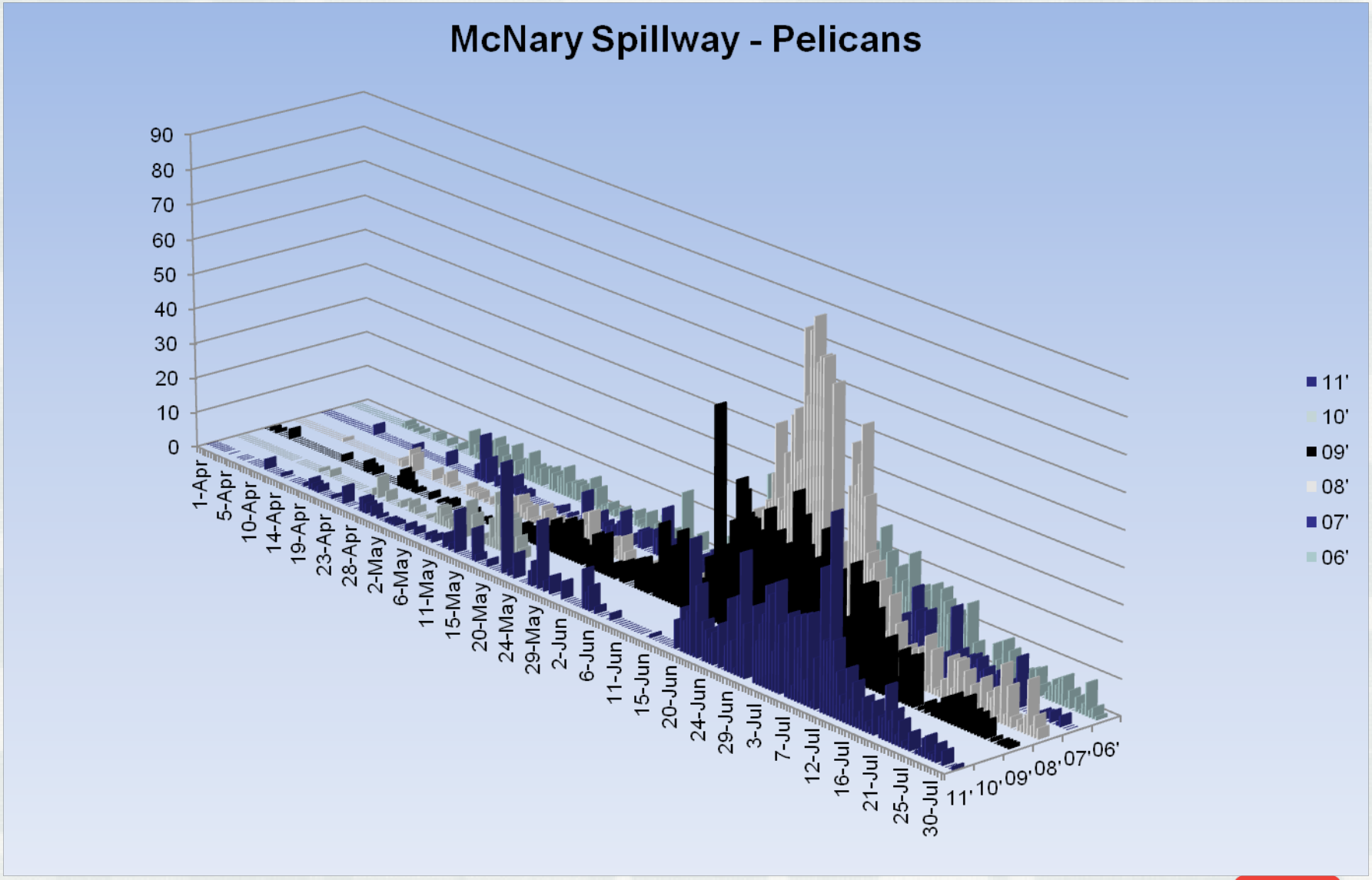
McNary Dam

- Perching deterrents: wires strung over barge dock hand rail and outfall pipe.
- New fish bypass outfall pipe has hydrocannon installed at the end – pump currently damaged – to be repaired in June. operating 5 propane cannons: 2 on the nav lock wing wall, 1 at the west end of the navlock, 1 at the end of the north ice-trash sluiceway, and one about 3/4 out on the outfall pipe.
- 13 wires total.



Opportunistically Collected Data – Data presented to show general trends


McNary Spillway - Cormorants
250
200
150
100
50
0
1-Apr
7-Apr
14-Apr
20-Apr
27-Apr
3-May
9-May
16-May
22-May
29-May
4-Jun
10-Jun
17-Jun
23-Jun
30-Jun
6-Jul
12-Jul
19-Jul
25-Jul
July
7-Aug
13-Aug
20-Aug
26-Aug
1-Sep
8-Sep
14-Sep
21-Sep
27-Sep
'11
'10
'09
'08
'07
'06
'11
'10
'09
'08
'07
'06



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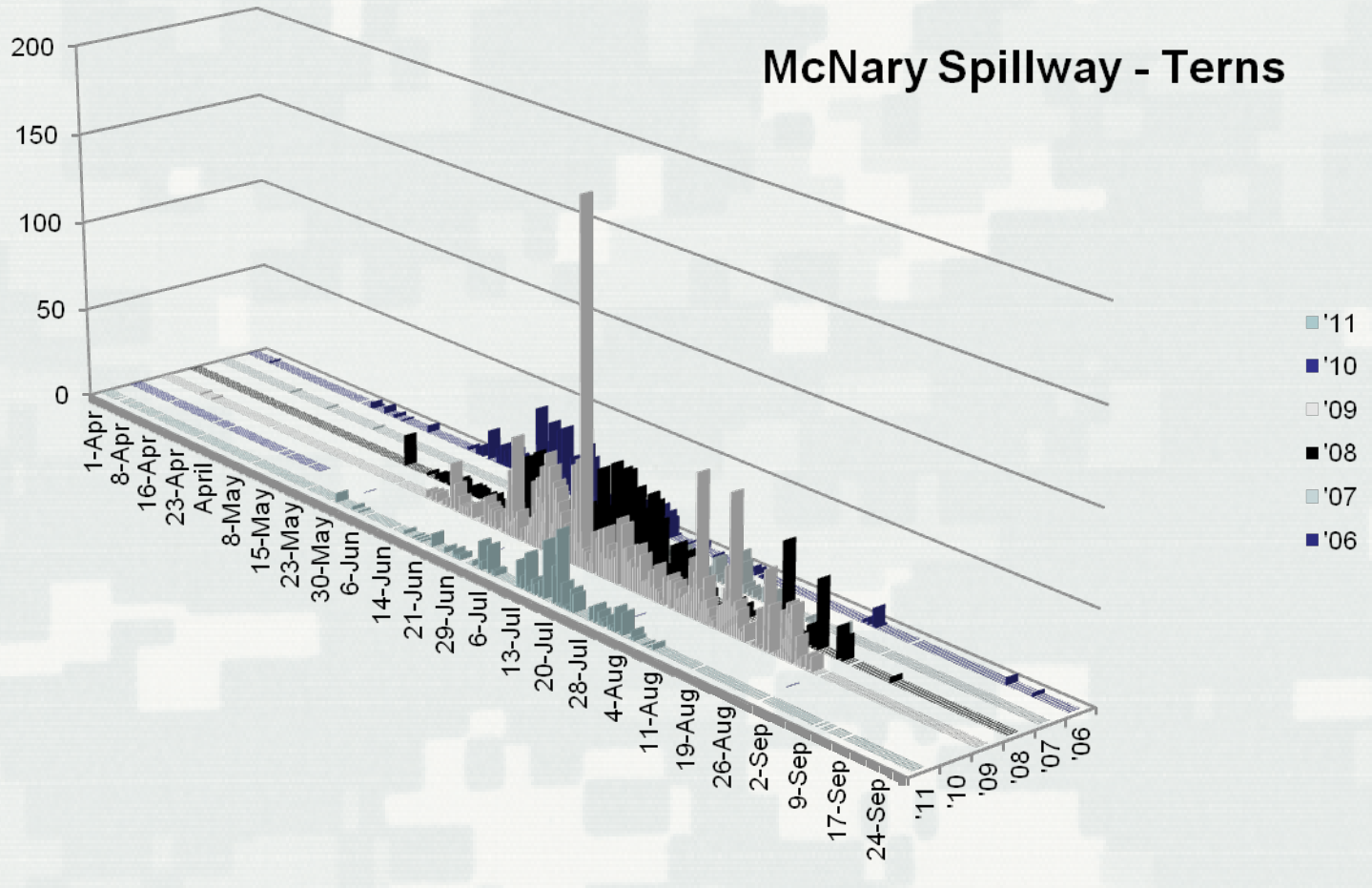
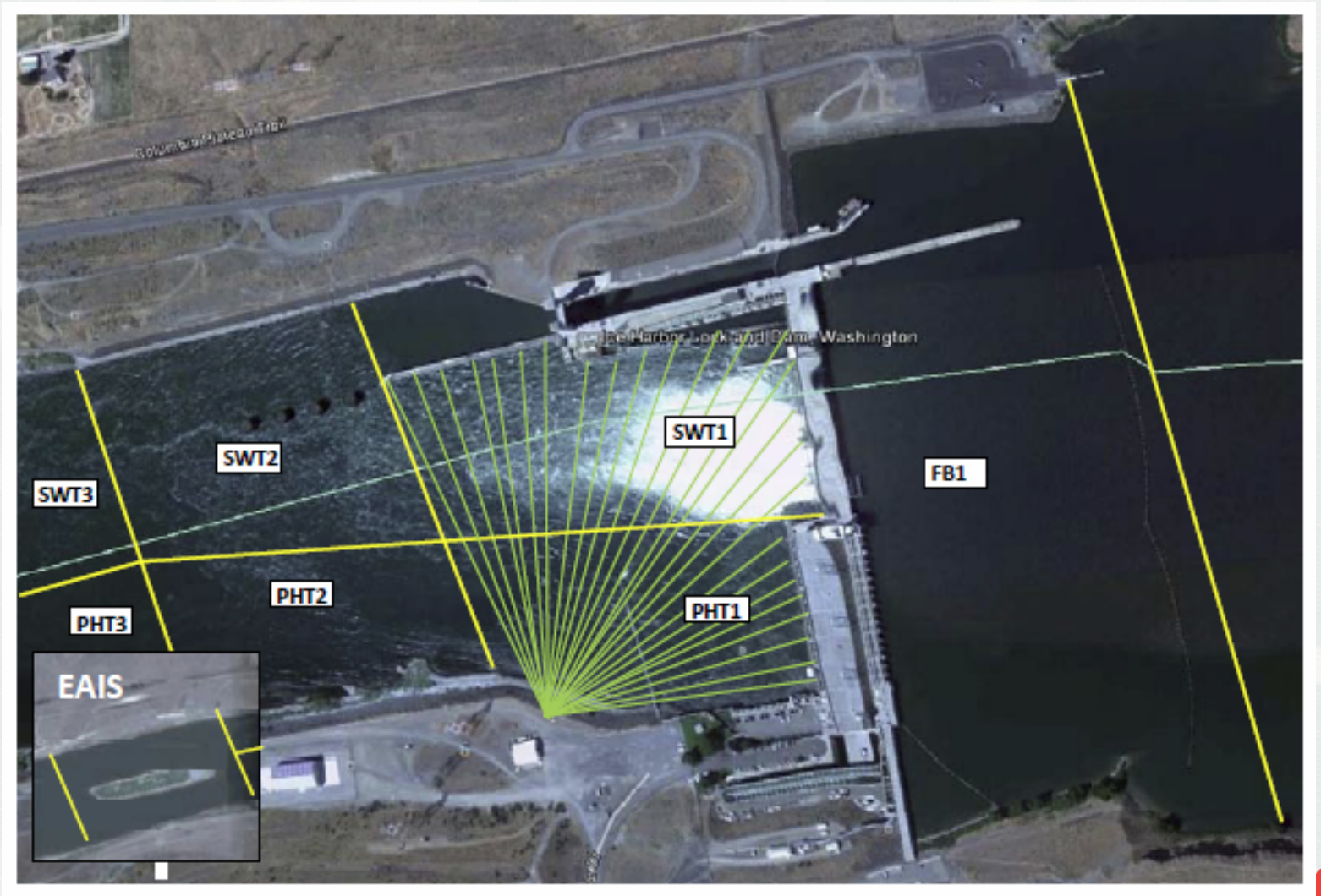
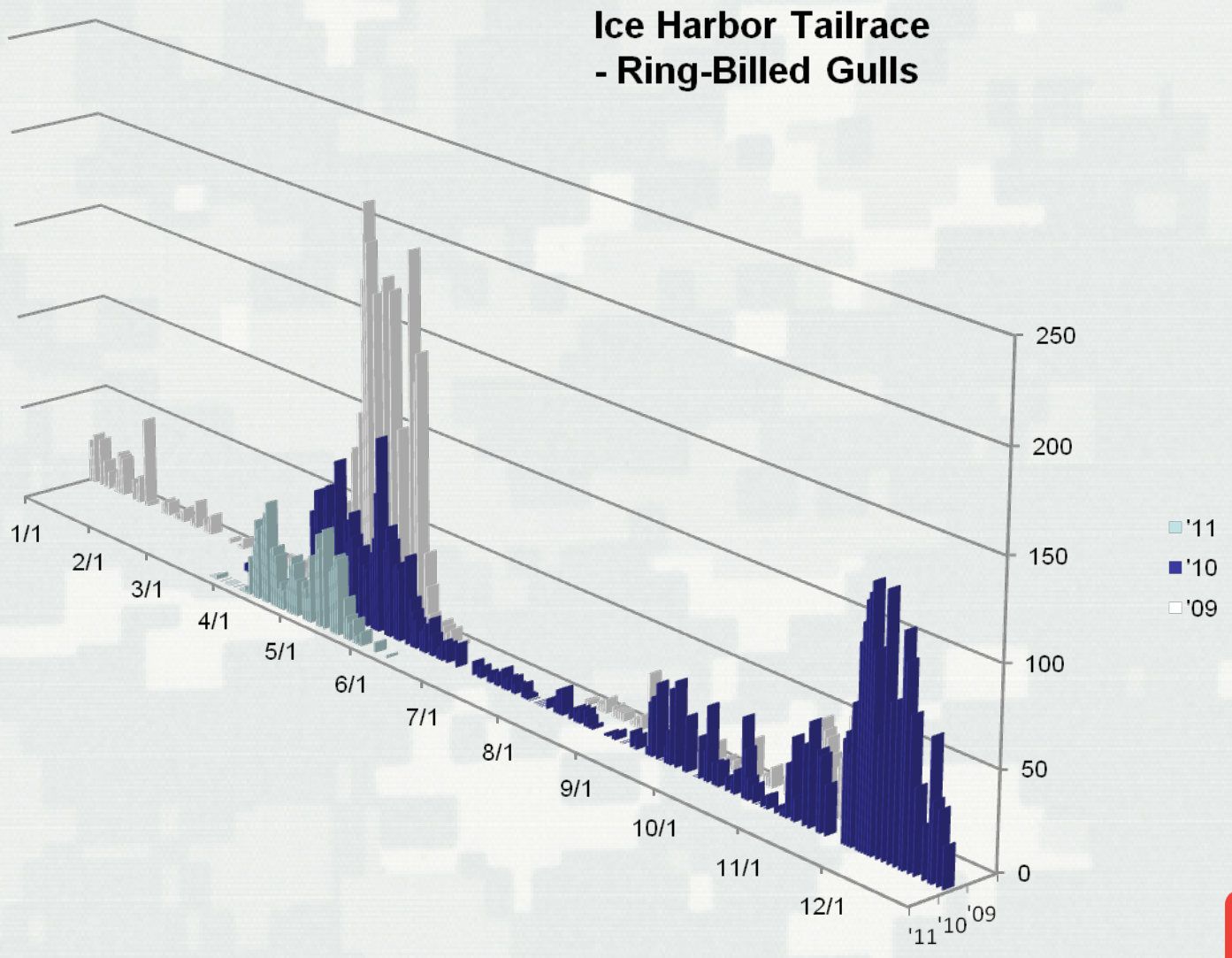

McNary Spillway - Terns
200
150
100
50
0
1-Apr
8-Apr
16-Apr
23-Apr
April
8-May
15-May
23-May
30-May
6-Jun
14-Jun
21-Jun
29-Jun
6-Jul
13-Jul
20-Jul
28-Jul
4-Aug
11-Aug
19-Aug
26-Aug
2-Sep
9-Sep
17-Sep
24-Sep
'11
'10
'09
'08
'07
'06
'11
'10
'09
'08
'07
'06

Ice Harbor Dam



ng deterrents: wire strung over nav. lock wing wall hand rail and spider wire on wing wall light poles



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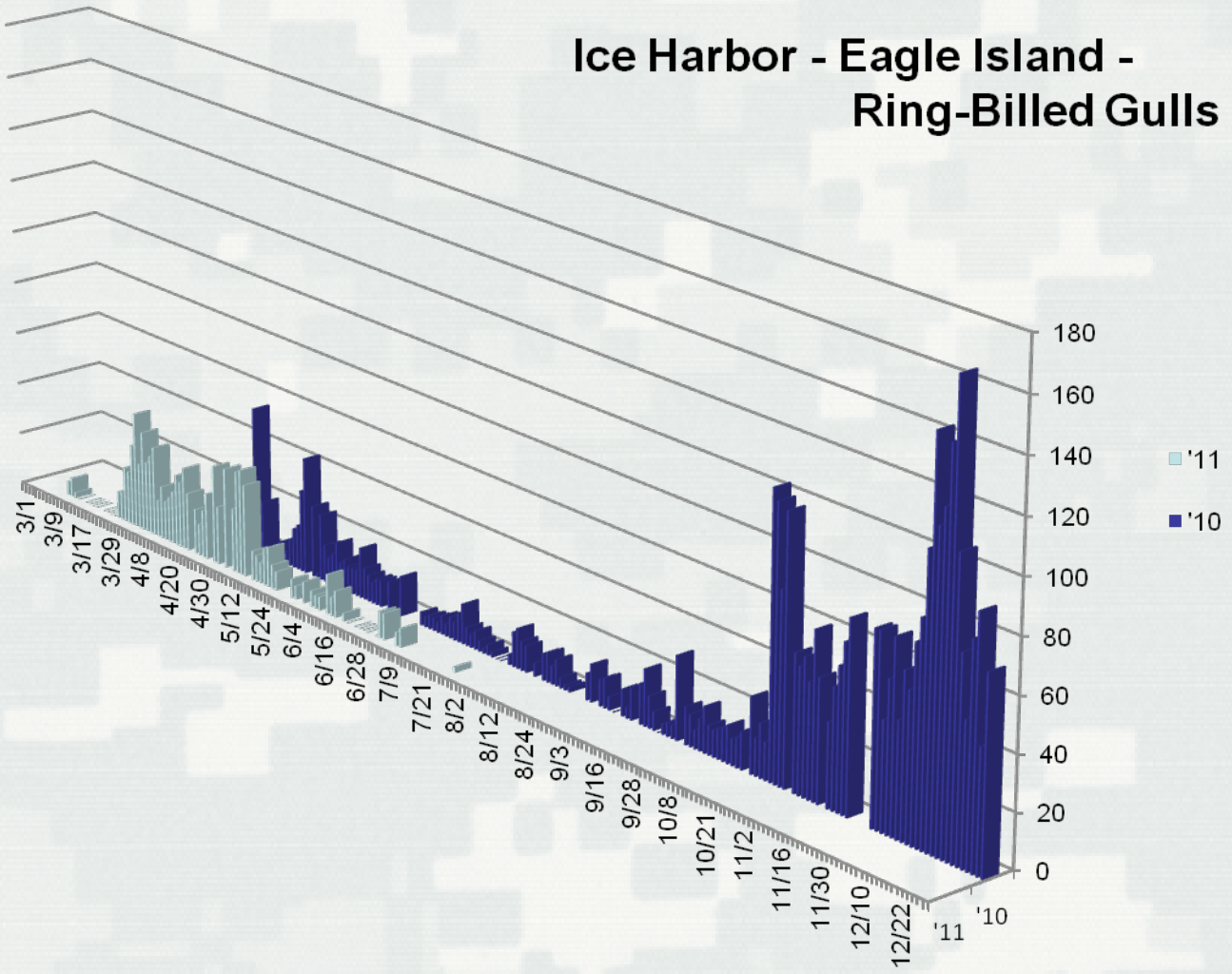
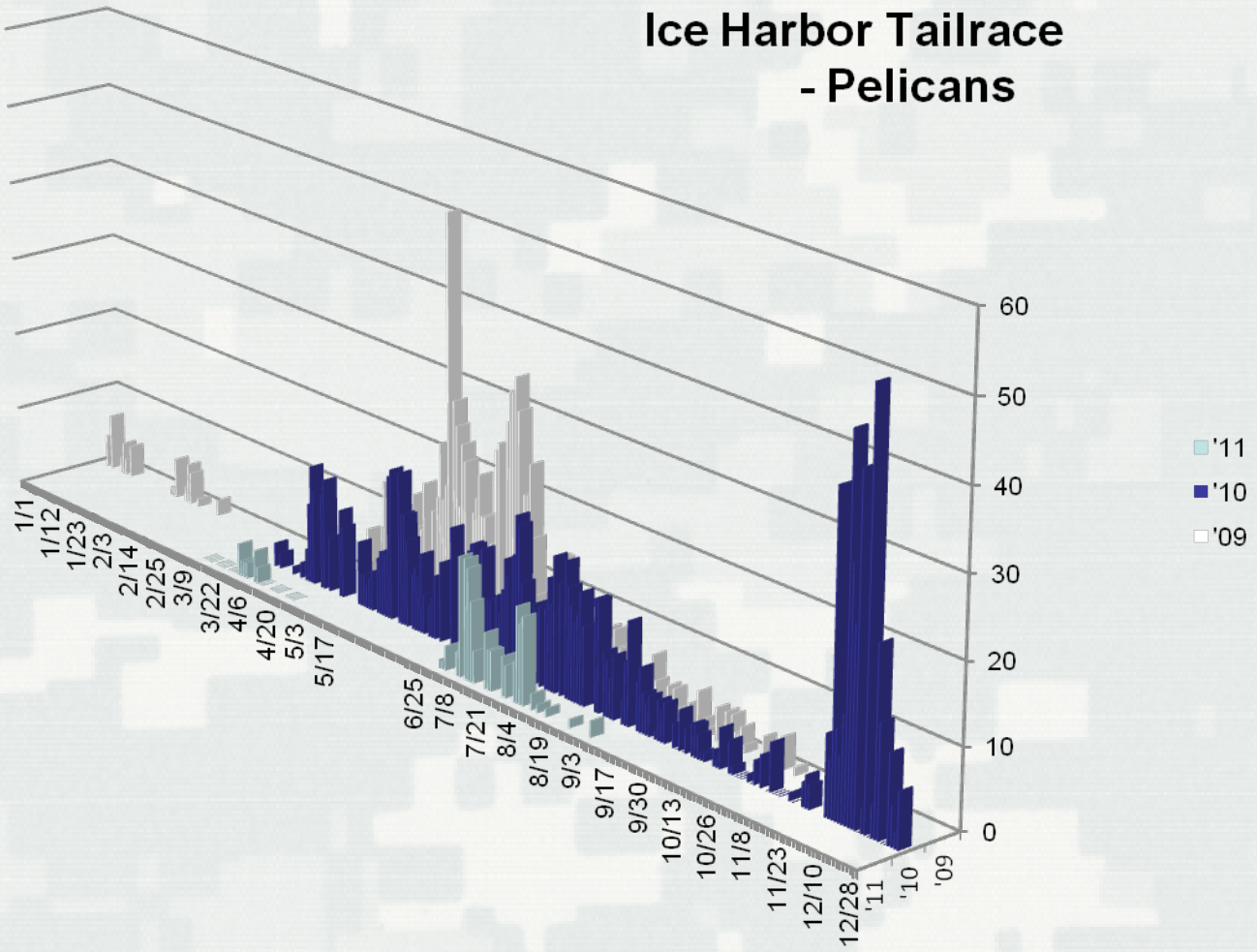
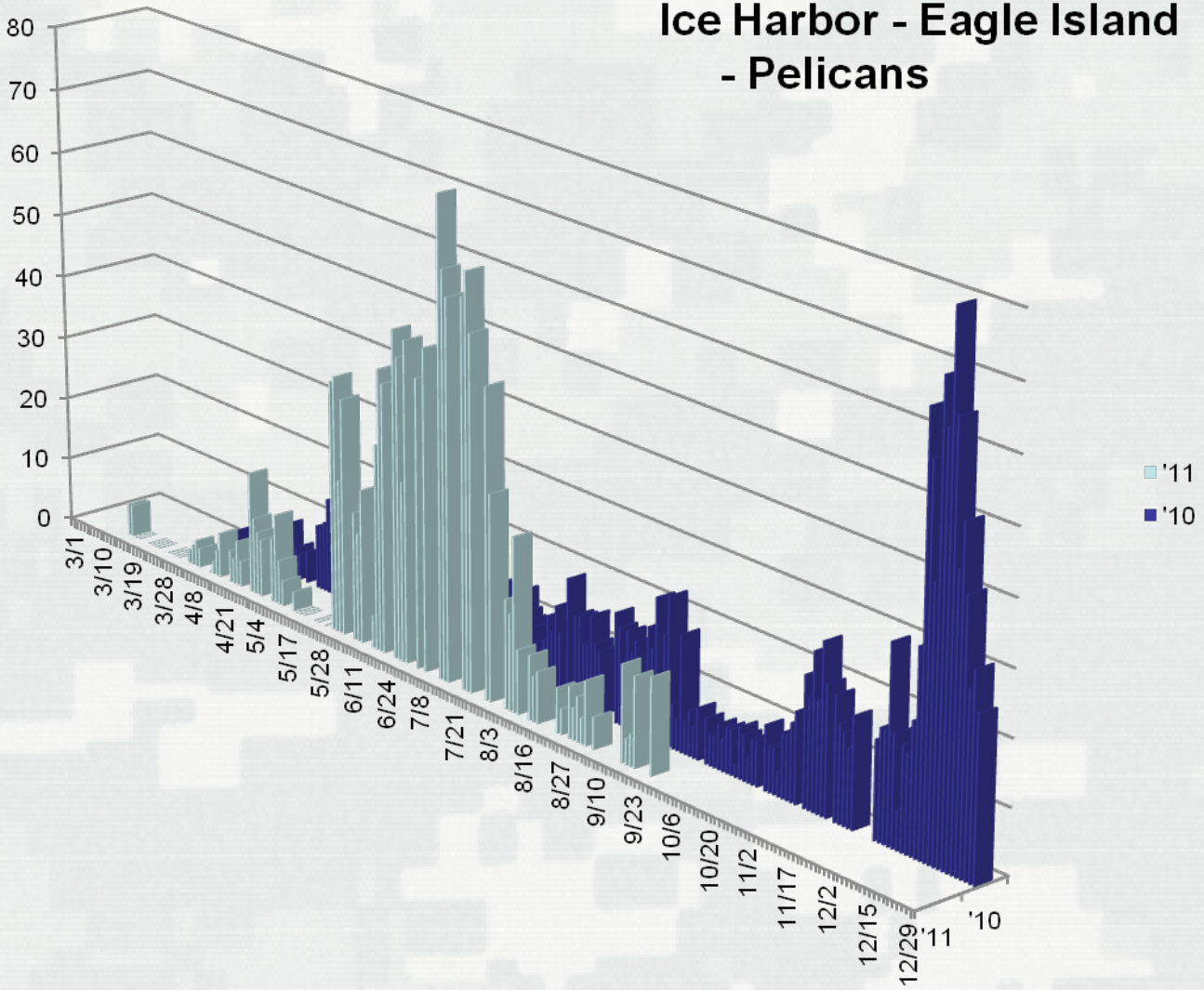
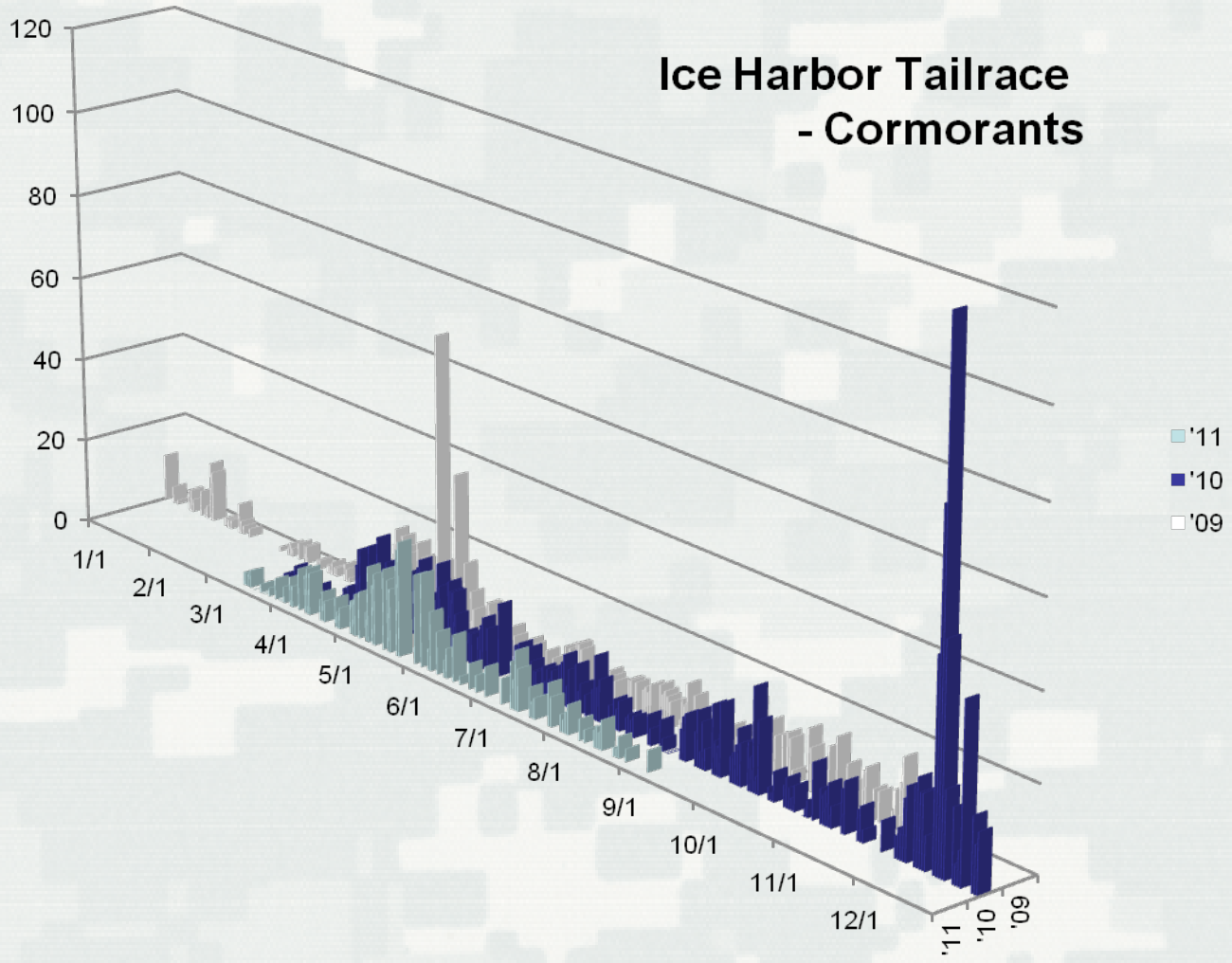
Ice Harbor - Eagle Island - Ring-Billed Gulls




Ice Harbor Tailrace
- Pelicans
60
50
40
30
20
10
0
'11
'10
'09
1/1
1/12
1/23
2/3
2/14
2/25
3/9
3/22
4/6
4/20
5/3
5/17
6/25
7/8
7/21
8/4
8/19
9/3
9/17
9/30
10/13
10/26
11/8
11/23
12/10
12/28
'11
'10
'09


Ice Harbor - Eagle Island - Pelicans
80
70
60
50
40
30
20
10
0
3/1
3/10
3/19
3/28
4/8
4/21
5/4
5/17
5/28
6/11
6/24
7/8
7/21
8/3
8/16
8/27
9/10
9/23
10/6
10/20
11/2
11/17
12/2
12/15
12/29
'11
'10
'11
'10



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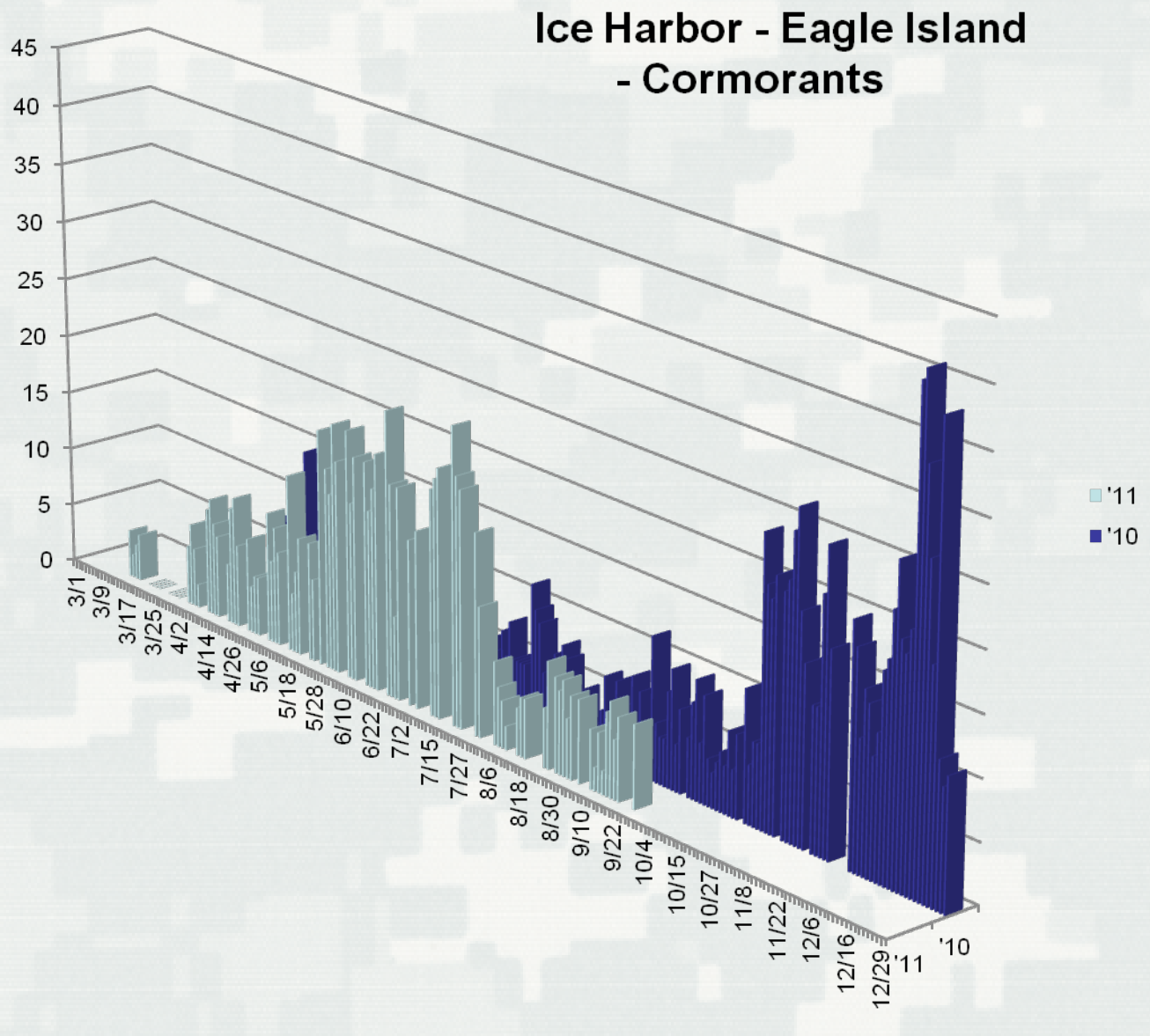

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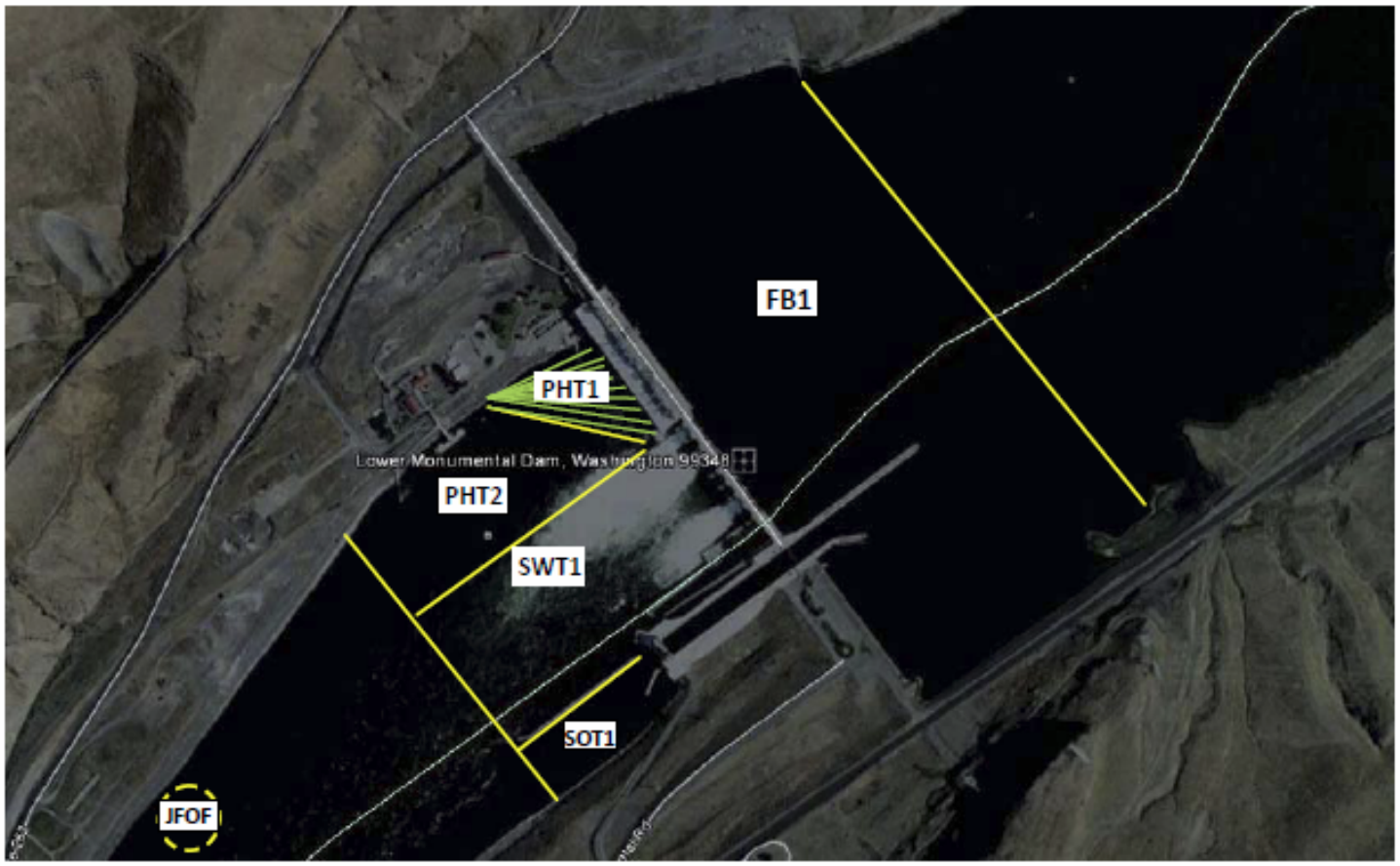
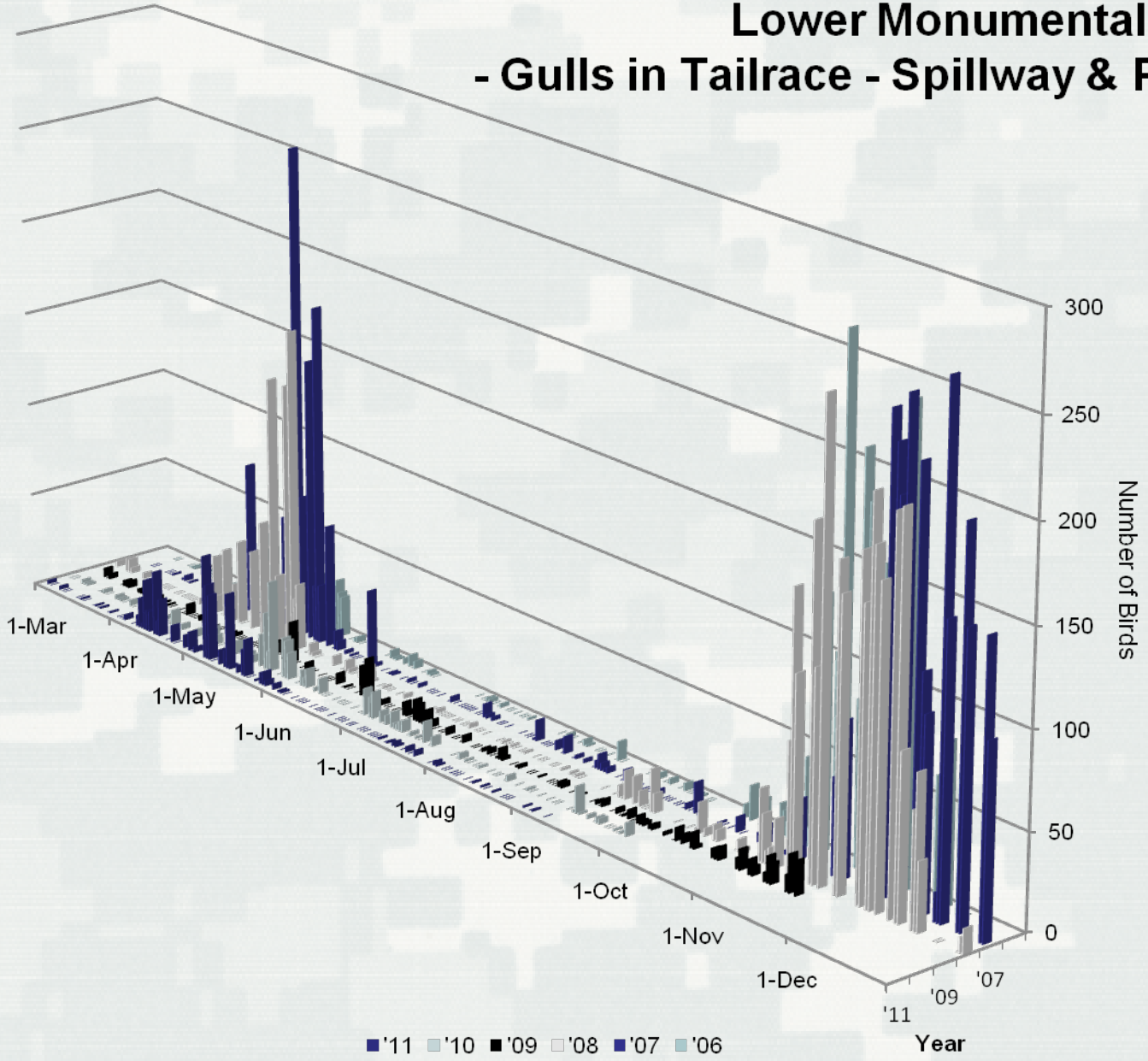
Lower Monumental Dam

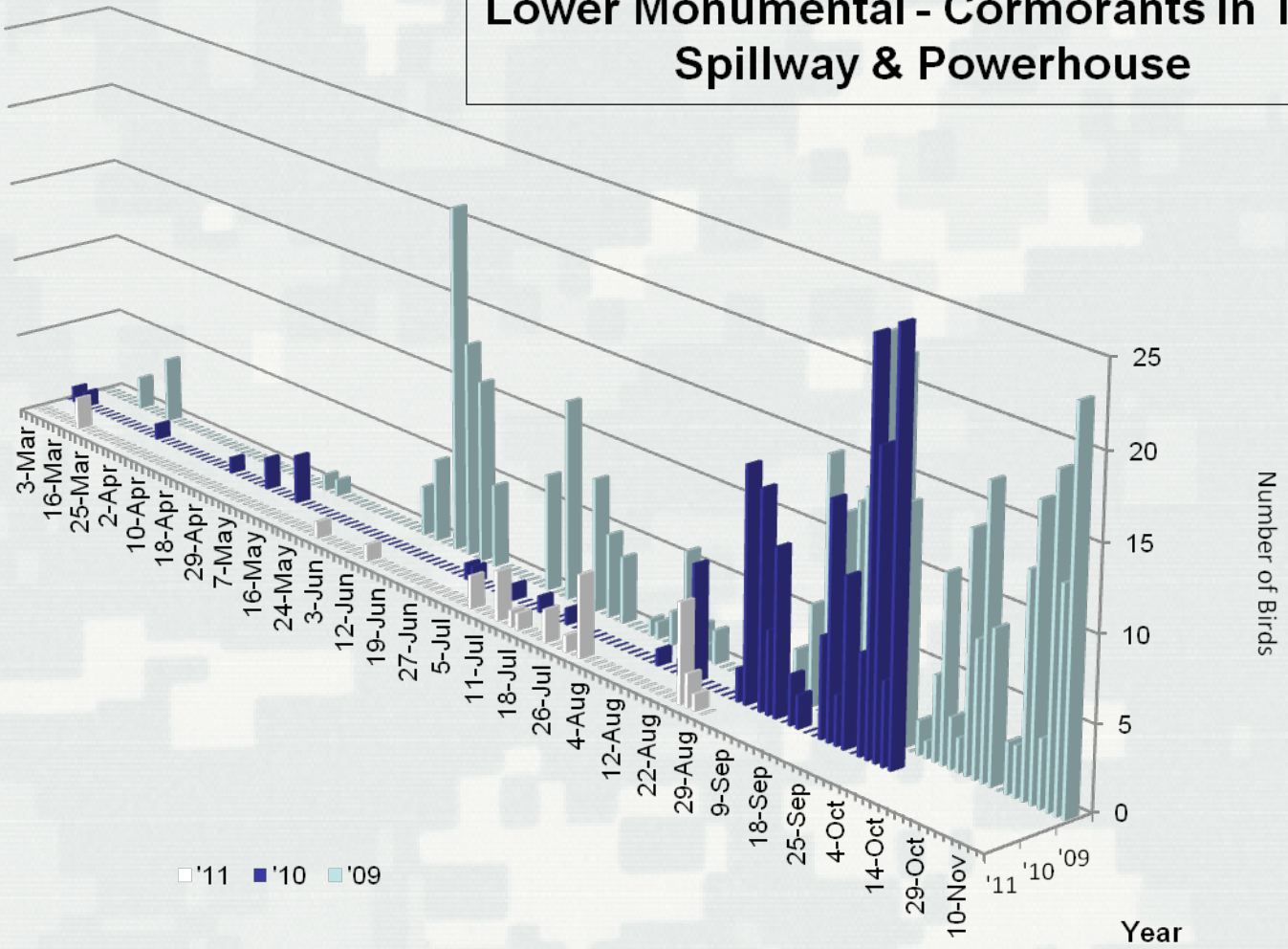


- Hydrocannons at end of new fish bypass outfall pipe in JFOF zone.
- Perching deterrents: wire strung over nav lock wing wall hand rail, and spikes installed on downstream end of wing wall deck.

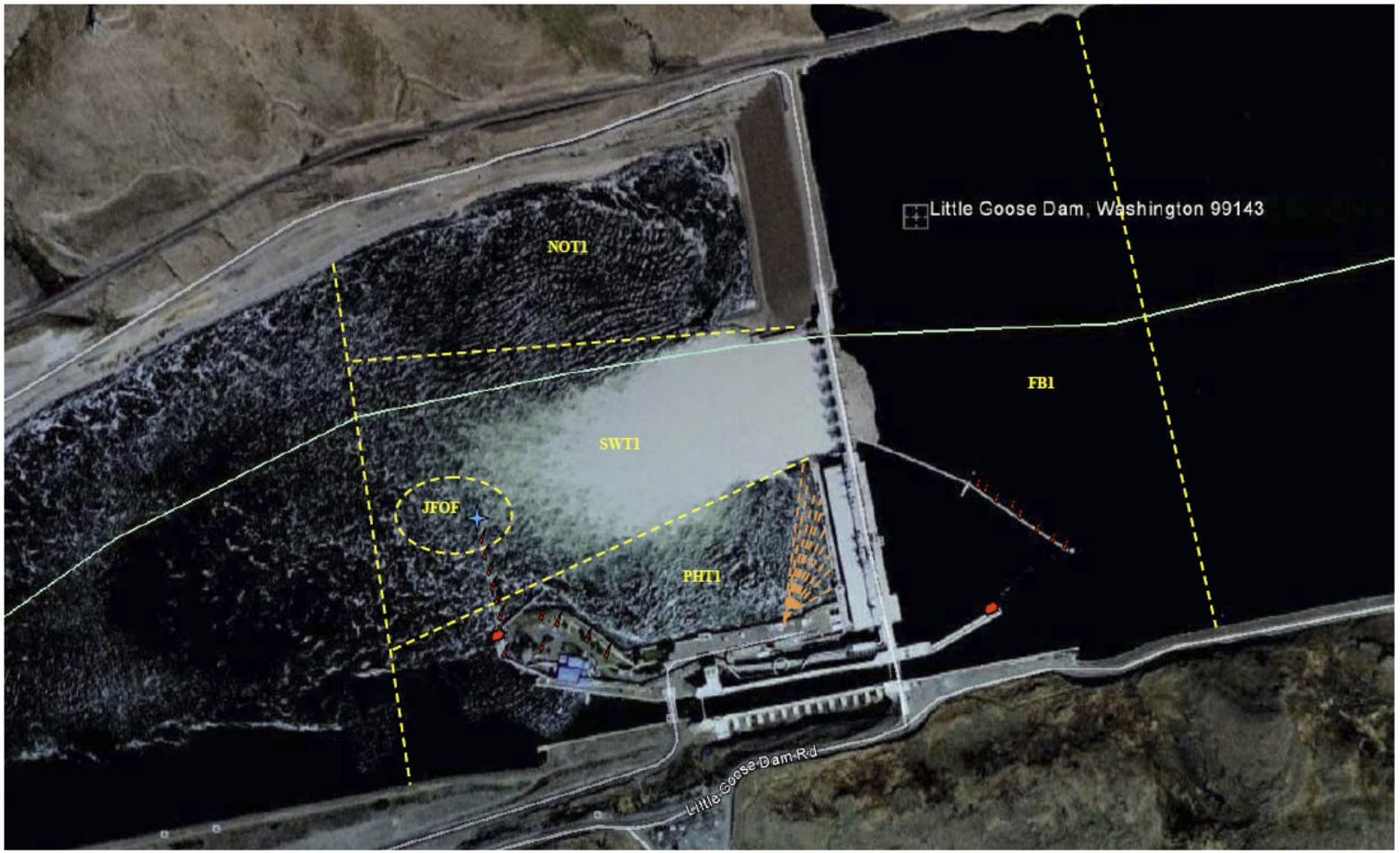
Lower Monumental
- Gulls in Tailrace - Spillway & Powerhouse

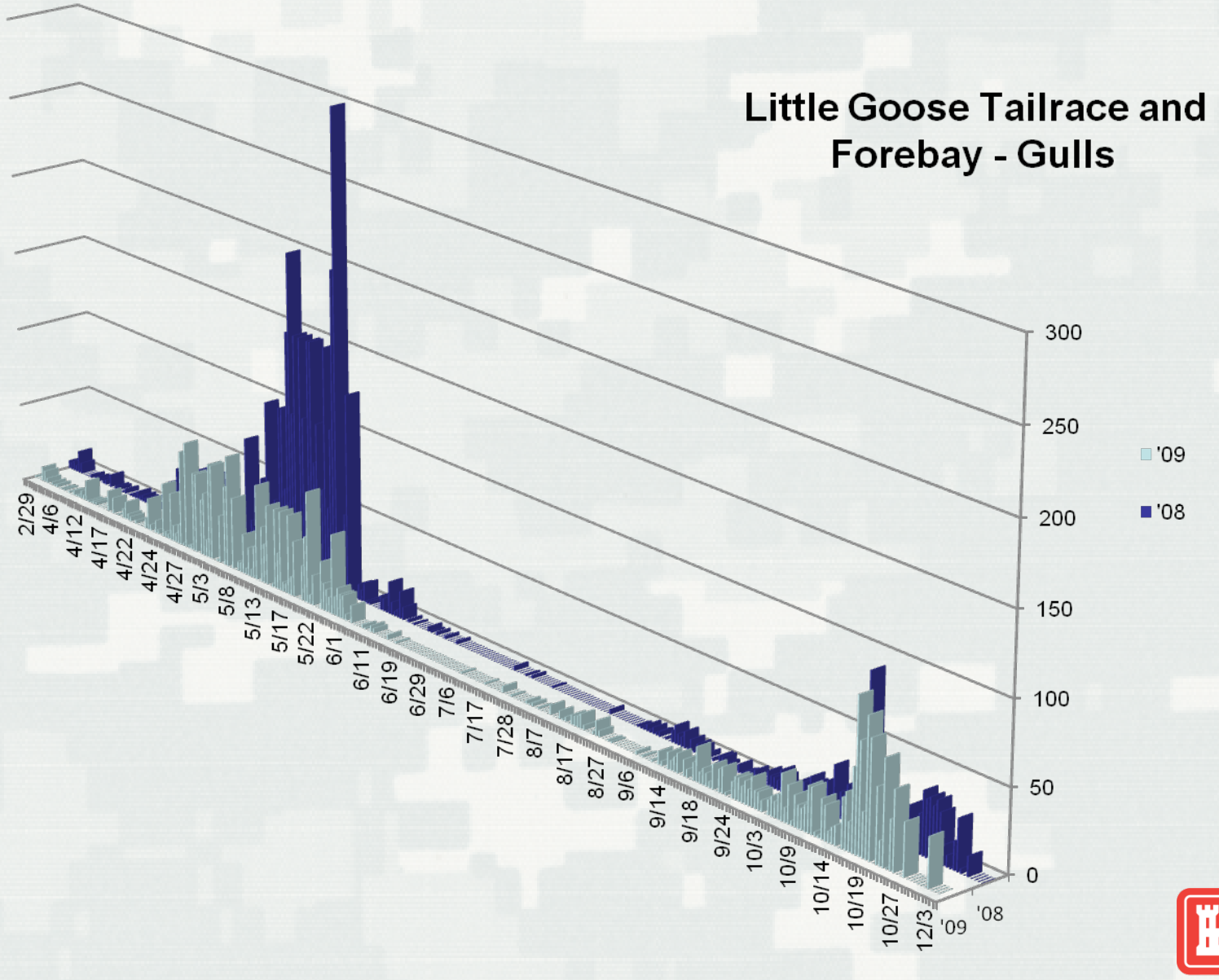


Lower Monumental - Cormorants in Tailrace - Spillway & Powerhouse

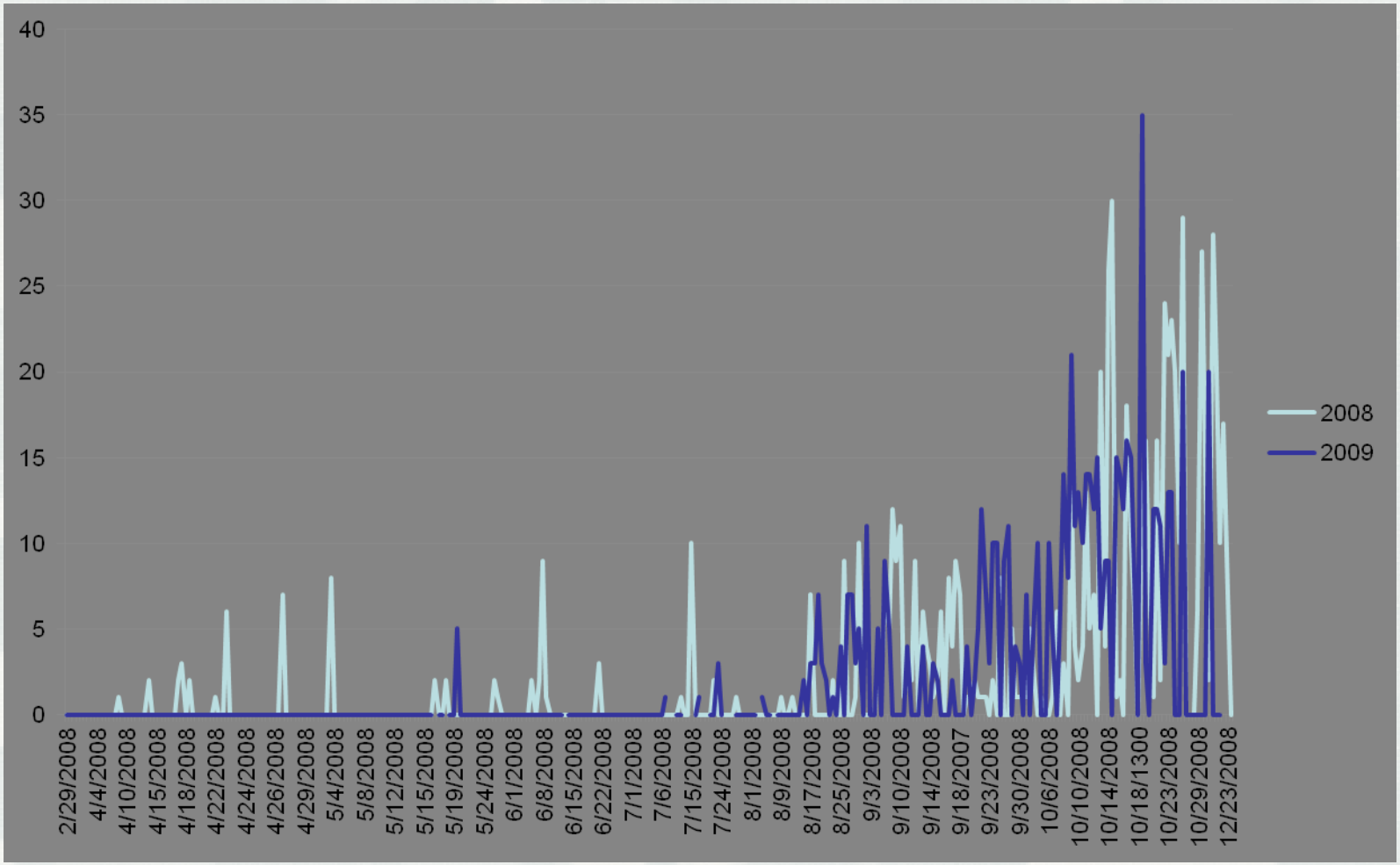


Little Goose Dam




Little Goose Tailrace and Forebay - Gulls
300
250
200
150
100
50
0
'09
'08
2/29
4/6
4/12
4/17
4/22
4/24
4/27
5/3
5/8
5/13
5/17
5/22
6/1
6/11
6/19
6/29
7/6
7/17
7/28
8/7
8/17
8/27
9/6
9/14
9/18
9/24
10/3
10/9
10/14
10/19
10/27
12/3
'09
'08

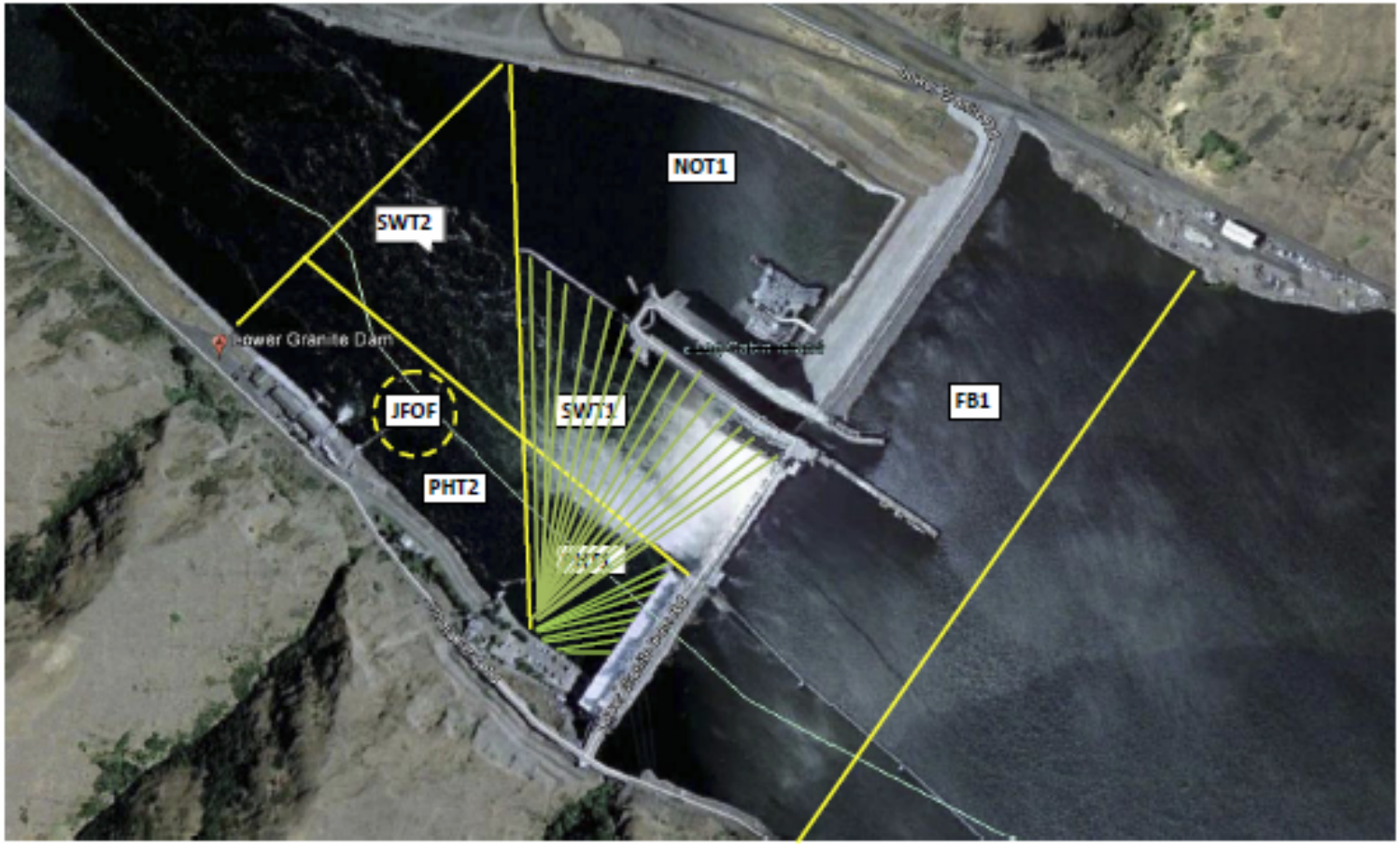
Little Goose Dam – Double-crested Cormorant Count



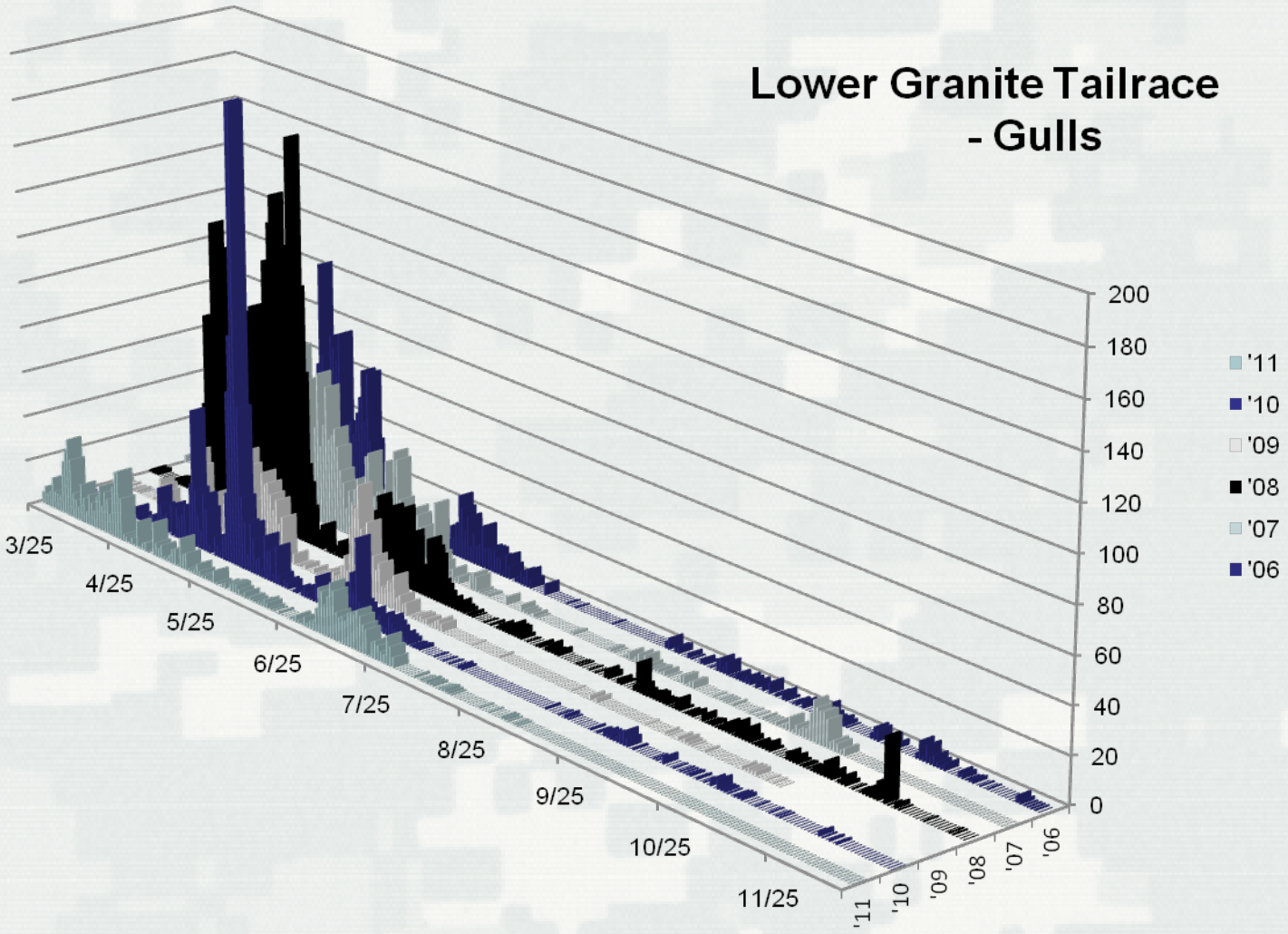
NOTE: Data is combination of forebay and tailrace counts. Does not include all winter 2007/2008 DCCO counts as part of overwintering diet study

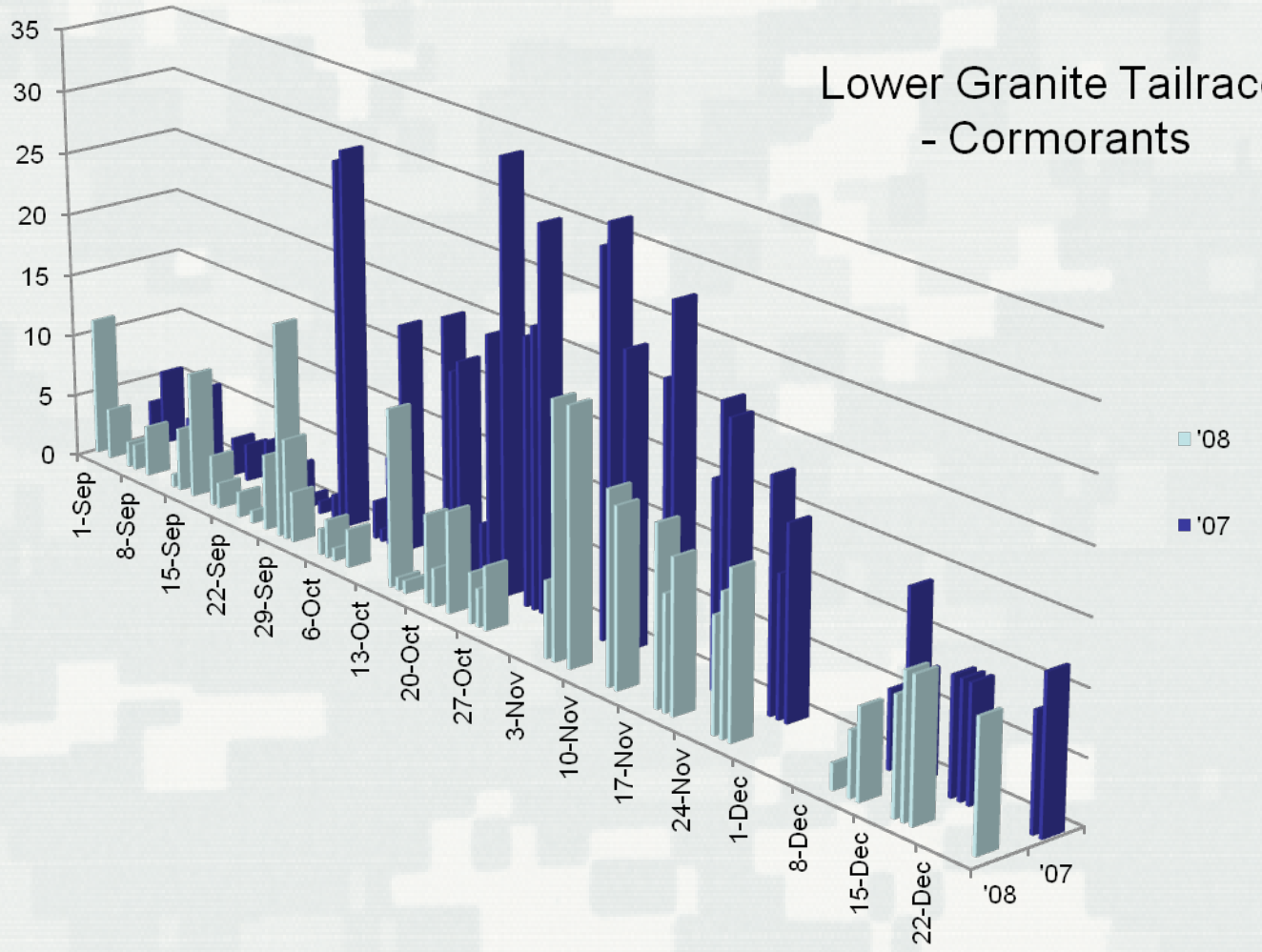
Opportunistically Collected Data – Data presented to show general trends

Lower Granite Dam



- Wire array extends from pole near visitor center overlook on south side of river to end of navigation lock guide wall, and upstream to the dam.
- Perching deterrents: wires strung above guide wall hand rails, row of spike wire on guide wall deck, and spider wires on top of guide wall light poles and forebay buoys.


Lower Granite Tailrace
- Gulls
200
180
160
140
120
100
80
60
40
20
0
'11
'10
'09
'08
'07
'06
3/25
4/25
5/25
6/25
7/25
8/25
9/25
10/25
11/25
'11
'10
'09
'08
'07
'06


Lower Granite Tailrace
- Cormorants
35
30
25
20
15
10
5
0
1-Sep
8-Sep
15-Sep
22-Sep
29-Sep
6-Oct
13-Oct
20-Oct
27-Oct
3-Nov
10-Nov
17-Nov
24-Nov
1-Dec
8-Dec
15-Dec
22-Dec
'08
'07
'08
'07

DISCUSSION.

RECOMMENDATIONS?